Surge Arrester WN

9890 000 02472

Tech. No. 4512 104 71143

FILING INSTRUCTIONS

File this documentation in binder:

OPTIMUS

E 1997 Philips Medizin Systeme
ALL RIGHTS RESERVED

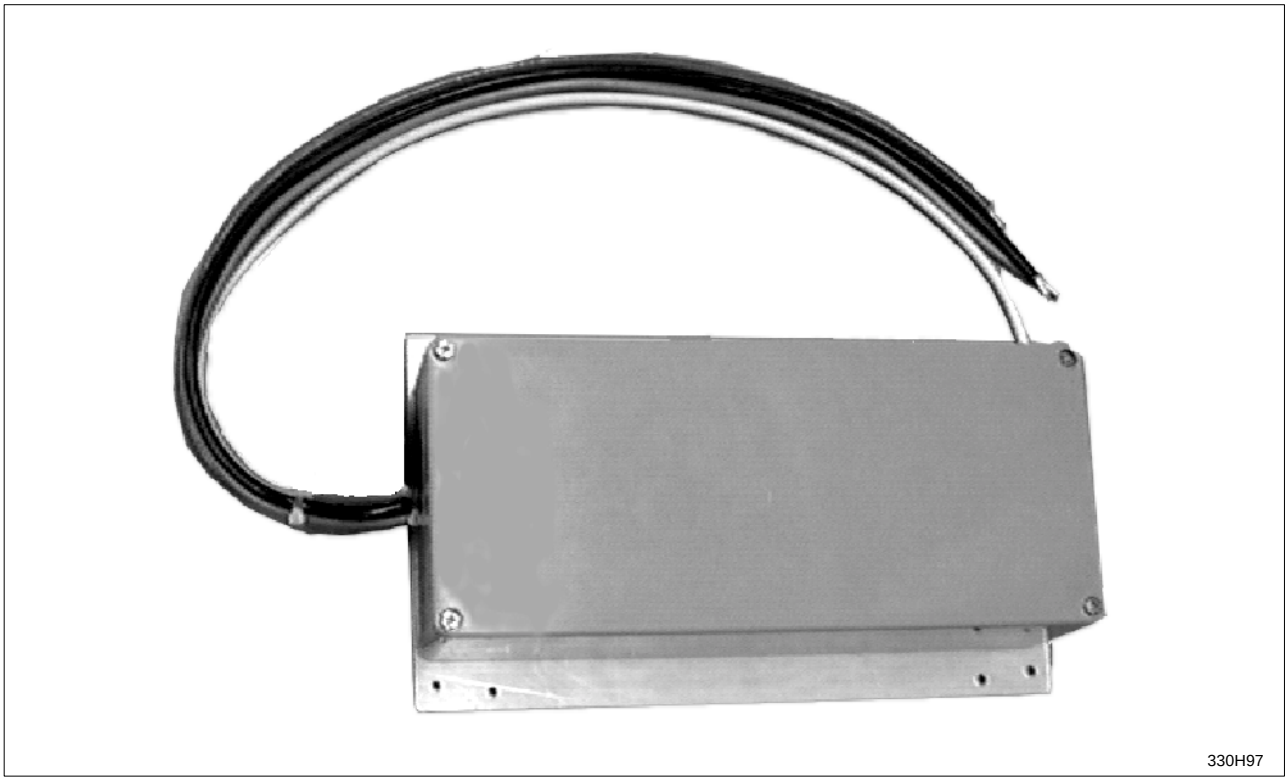
PHILIPS

Philips Medical Systems
Development and Manufacturing Centre

SERVICE MANUAL
742
UNIT

Surge Arrester WN
9890 000 02472

Techn. No. 4512 104 71143



330H97

Surge Arrester for OPTIMUS generators

DMC Hamburg

Printed in Hamburg, Germany

E 1995 Philips Medizin Systeme
ALL RIGHTS RESERVED

SERVICE MANUAL - UNIT

Surge Arrester WN

Author: P. Thron

Type No. 9890 000 02472
Techn. No: 4512 104 71143

In case there are any questions concerning this manual,
please send this LOPAD via fax to 49/(0)40/5078 2481

File: Surge Arrester_a970

List of pages and drawings (LOPAD) **Manual Order No: 4512 984 04682**

0.5	(a/97.0)	223 mm (Rosa Karton)
1	(a/97.0)	
2	(a/97.0)	
3...5	(a/97.0)	E
P-List	9890 000 02471	
Z-1	(a/97.0)	A4
Z-2	(a/97.0)	A4
Z-3	(a/97.0)	A4

E 1997 Philips Medizin Systeme
ALL RIGHTS RESERVED

TEXT

1.	**Introduction and technical data**	3
1.1.	Product information	3
1.2.	Compatibility	3
1.3.	Mechanical data	3
1.4.	Environmental data	4
1.5.	Electrical data	4
1.6.	Scope of delivery	4
2.	**Installation**	4
2.1.	Installation and connection of the Surge Arrester	4
2.2.	Programming of the generator PCB EMC filter (EQ200)	5
3.	**Fault finding**	5
4.	**Preventive maintenance**	5

DRAWINGS

Dimensions Z-1
Installation sample Z-2
Connection Z-3

---

1. Introduction and technical data

1.1. Product information

The Surge Arrester protects the electronic circuitry of the generator OPTIMUS against increased mains interference in accordance with IEC 801-5 class X increased mains interference.
Surges: max. 6 kV line to line and line to earth

It is looped into the mains feeder of the generator and in calculating the mains resistance it must be taken into consideration at approx. 20 mΩ.

The Surge Arrester may only be used on the generator in conjunction with the mains transformer 9890 000 0230x (optional).

1.2. Compatibility

The Surge Arrester is compatible with:

- Generator basis OPTIMUS 50/65/80 — 9890 000 0216x
- Mains transformer 440 V - 480 V — 9890 000 0230x (OPTIMUS RAD)
- Converter R/F — ≥ 9890 000 02772

1.3. Mechanical data

See drawing: Z-1 Dimensions

Weight: approx. 6 kg

E 1997 Philips Medizin Systeme
ALL RIGHTS RESERVED

1.4. Environmental data

According to PMS standard UXW 13600.

Ambient temperature:	10 ... 40 _C
Relative humidity:	15 ... 90%, no condensation
Relative atmospheric pressure:	70 ... 110 kPa

1.5. Electrical data

Mains voltage:	max. 3 x 480 V + 6%
Mains frequency:	49 ... 61 Hz
Impedance:	23 mΩ at 60 Hz
	20 mΩ at 50 Hz
Supply configuration:	3 phase, 3 wire power, earth, WYE or grounded DELTA or non-grounded (floating) DELTA

1.6. Scope of delivery

– 1 Surge Arrester	4512 104 7114x
– 2 signs	4512 104 2938x
– 1 set of service documentation	4512 984 0468x

2. Installation

2.1. Installation and connection of the Surge Arrester

S Define the installation position of the Surge Arrester.

It is recommended that it be fitted into the wall junction box of the generator.

The following must be taken into account:
- The mains feeder (4 x AWG 8) of the Surge Arrester is 500 mm long as standard.
- The free length of the mains feeder of the generator is 3 m.

S Unscrew the cover.

S Attach the Surge Arrester.

S Connect the 4 wires of the Surge Arrester to the mains terminal MEX100 in the wall junction box.

L1 = brown
L2 = black
L3 = violet
PE = green/yellow

S Connect the mains feeder of the generator to the terminal WNX 1100 of the Surge Arrester in correct phase sequence.

S Fit the cover.

The Surge Arrester has no fuse of its own. For this reason it may only be looped in between the generator and the power-specific line fuse of the generator.

E 1997 Philips Medizin Systeme
ALL RIGHTS RESERVED

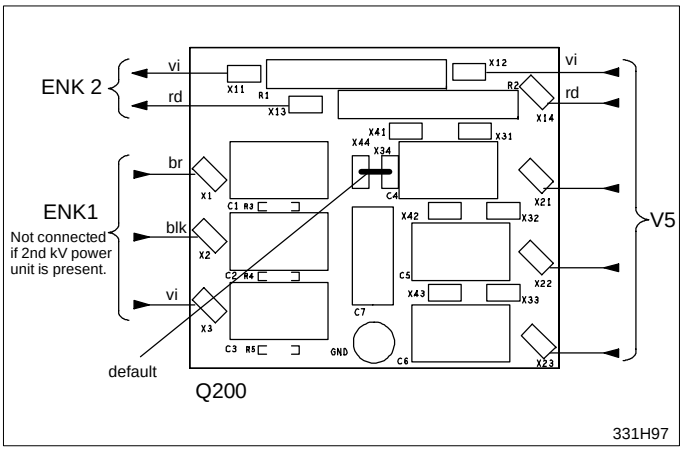
2.2. Programming of the generator PCB EMC filter (EQ200)

Only if there is a DELTA mains with 1 grounded phase!

The aim of this programming is to connect the Y capacitors C7 of the EMC filters Q200 in the converter assemblies to the grounded phase.

- Remove the front and right-hand metal covers from the converter assembly/ies EQ/E2Q.
- Remove EMC filter board(s) Q200.
- Remove the default link X34–X44.
- Connect the link to the ground phase as follows:
  - L1 grounded: X31 ---- X41
    or
  - L2 grounded: X32 ---- X42
    or
  - L3 grounded: X33 ---- X43

  See also Z1–x.x ”kV power unit”.
- Re-insert and connect up the EMC filters.
- Fit the metal covers.
- Affix the supplied signs to the modified converter assemblies.



3. Fault finding

Generally speaking the following faults may occur:

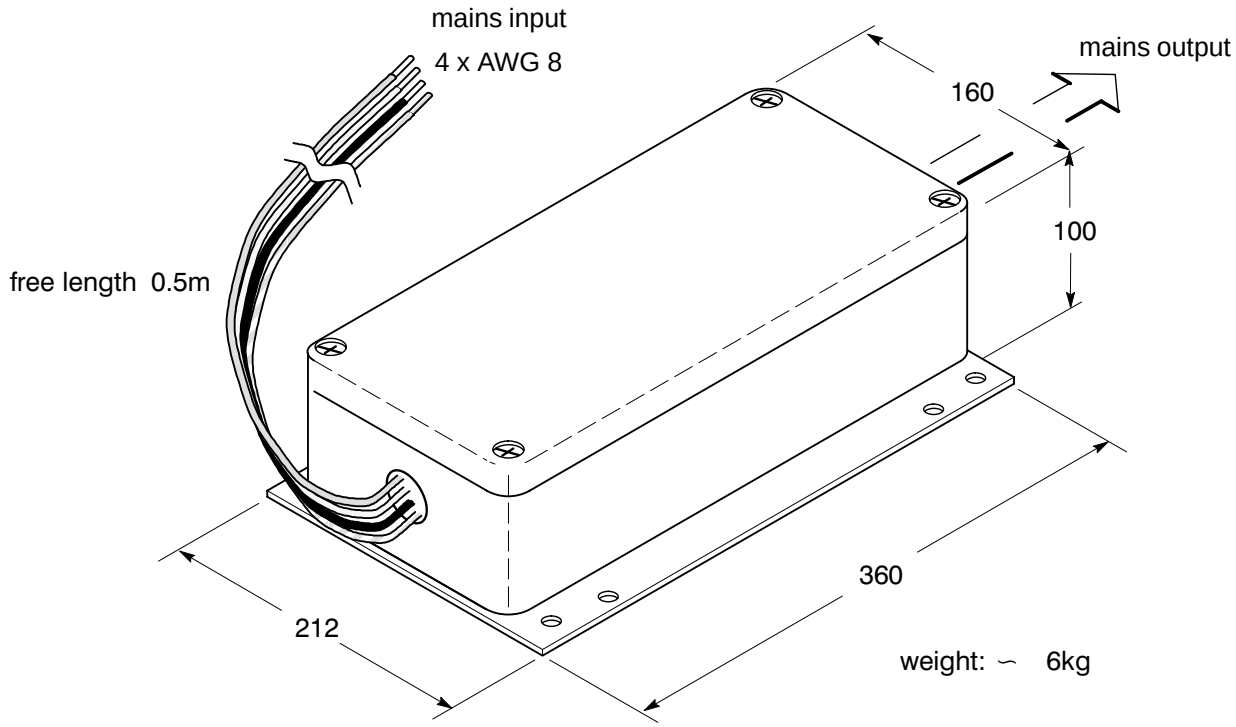
- Phases L1 ... L3 are open.
- The phases are shorted with one another.
- The phases are shorted with earth. (No automatic detection possibility with grounded DELTA mains!)

A repair can only be performed by replacing the complete Surge Arrester.

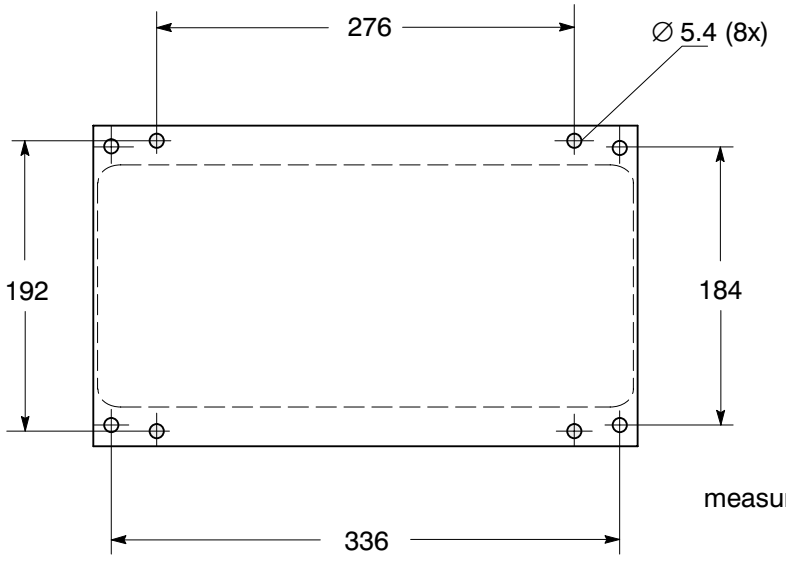
4. Preventive maintenance

The Surge Arrester is maintenance-free.

E 1997 Philips Medizin Systeme
ALL RIGHTS RESERVED



fixing dimension sketch



measures in mm

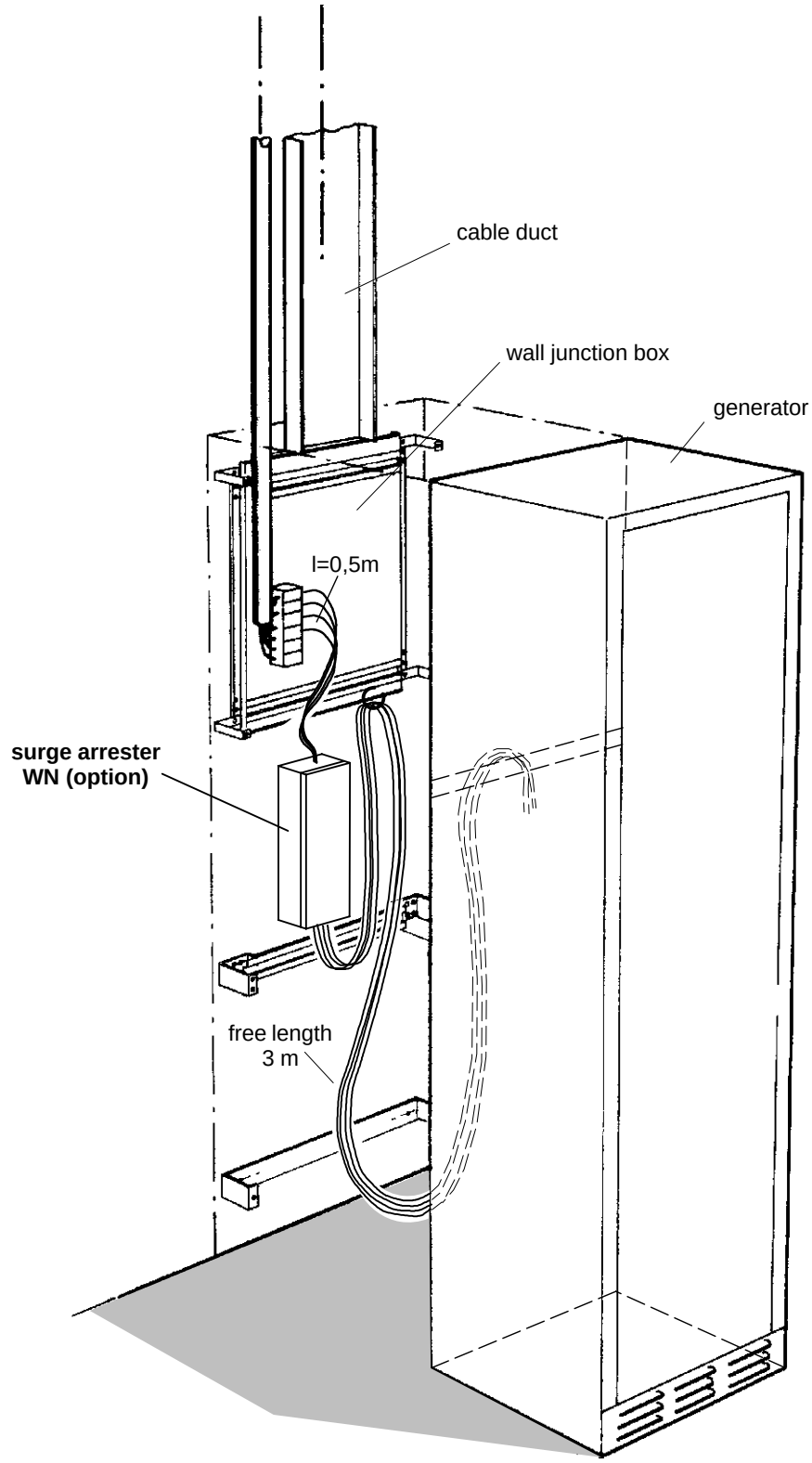
use shadow mask 184 x 336 or 192 x 276

A4 97–08–12 Wt/He

Surge Arrester

Mechanical dimensions

© 1995 Philips Medical Systems
ALL RIGHTS RESERVED

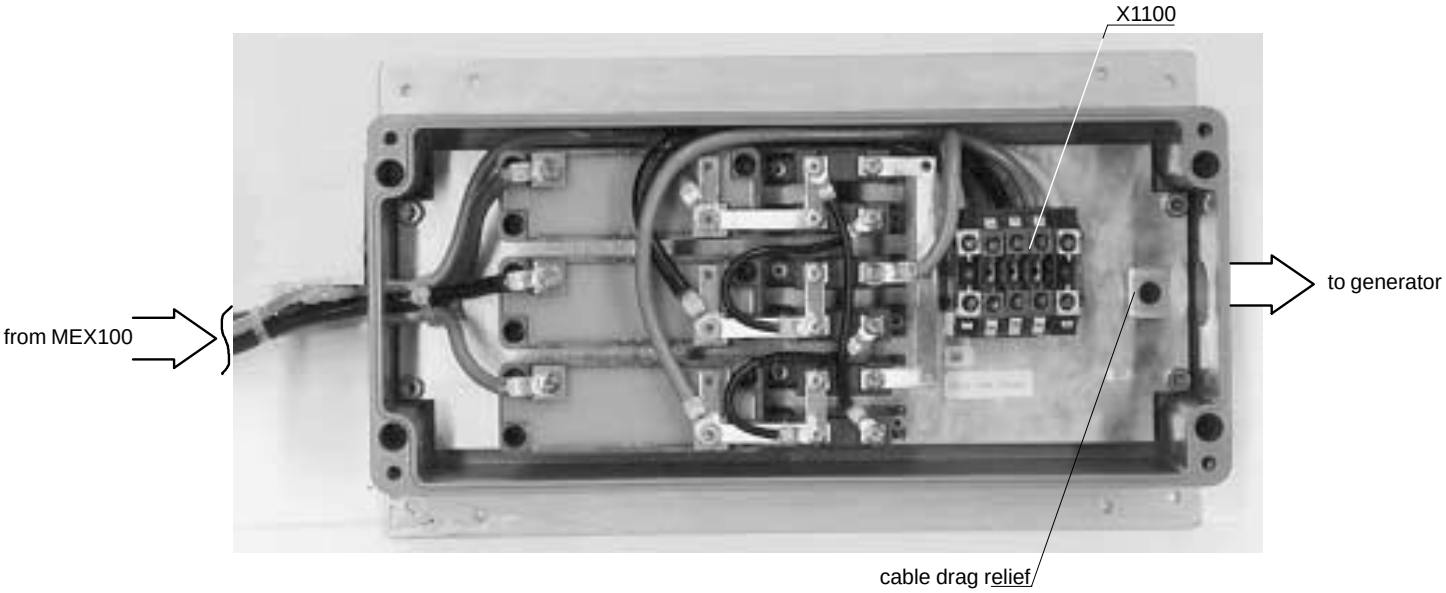


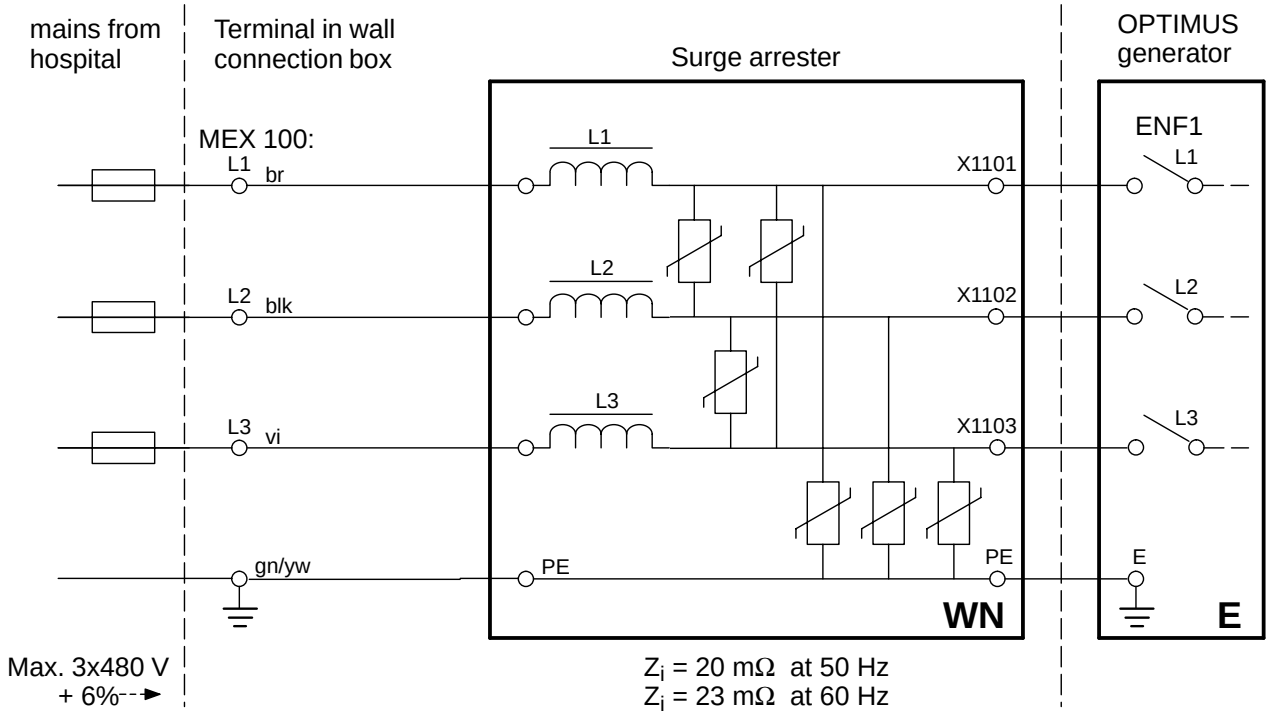
A4 97–08–12 Sie./He

Surge Arrester_Z–2a

Installation sample

© 1994 Philips Medical Systems
ALL RIGHTS RESERVED





A4 97–08–12 Wt./He.
Surge Arrester_Z–3a

Connection

© 1995 Philips Medical Systems
ALL RIGHTS RESERVED